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THE RELATIVE ROLES OF MATERNAL AND CHILD HEALTH CARE AND FAMILY PLANNING PROGRAMMES, PROXIMATE DETERMINANTS AND SOCIO-ECONOMIC CORRELATES IN INFLUENCING FERTILITY

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I. INTRODUCTION

1. In any society, fertility level can never attain the maximum potential due to a number of factors which lower it by limiting exposure to intercourse and exposure to conception. Such factors include maternal and child health care, family planning programmes, proximate determinants and socio-economic development. These factors interact in different ways to influence fertility. Hence it is very difficult to categorically measure the impact of each of them on fertility separately. Various research has acknowledge this difficulty. 1/

2. At the time of the 1974 World Population Conference in Bucharest, many African countries believed that socio-economic development would take care of population problems and as such, most of them did not consider taking family planning programmes seriously. However, a decade later in 1984, African governments came to realize that socio-economic development together with family planning programmes had to be addressed at the same time in their attempts to resolve development problems which were getting more and more difficult to handle in the light of high fertility levels. The Kilimanjaro Programme of Action on Population (KPA) adopted by African governments in 1984, included 14 recommendations addressed to African government, on fertility and family planning. The implementation of the recommendations would go a long way to influence fertility. Some of the recommendations on fertility and family planning called on governments to: incorporate family planning services into maternal and child health services; incorporate family planning education in training programmes for women, men and the youth; ensure the availability and accessibility of family planning services to all couples or individuals seeking them freely or at subsidized prices; consider setting up family planning outlets which include the utilization of existing health facilities and community based delivery system in order to reach those communities, couples and individuals who are currently not being served by the conventional delivery systems; make necessary efforts to improve planning, funding and management for more effective implementation of MCH/Family planning programmes; raise the age at marriage. 2/

1/ These include: Economic Commission for Africa, "The Impact of Maternal and Child Health and Family Planning (MCH/FP) Programmes on Fertility, Infant and Childhood Mortality and Maternal Health" ECA/POP/TP/89/2(1.3)

2/ United Nations Economic Commission for Africa, Kilimanjaro Programme of Action on Population, 1984.

3. This paper, has been prepared to fulfil a request by the 5th Session of the Joint Conference of African Planners, Statisticians in 1988. It attempts to discuss in relative terms how factors like maternal and child health care, family planning programmes, proximate determinats and socio-economic development influence fertility. Wherever empirical evidence of the impact of these factors on fertility exists, this will be given. In other instances, qualitative analysis will be presented. Section II of the paper discusses maternal and child health care and family planning programmes and their influence on fertility; section III deals with proximate determinants of fertility; socio-economic correlates of fertility is the focus of section IV; finally, section V is devoted to policy considerations to influence fertility.

II. MATERNAL AND CHILD HEALTH CARE AND FAMILY PLANNING PROGRAMMES

4. Both maternal and child health care and family planning programmes operate in the general frame work of over all socio-economic development and cultural context in influencing fertility, that is either increasing it or decreasing it at various points in time. In this section of the paper an effort is made to explain the mechanisms and relative roles of maternal and child health care and family planning on fertility.

(a) Maternal and child health care influence on fertility.

5. According to the demographic transition theory, fertility decline follows mortality decline. It is assumed that couples produce more children so that some of them can survive to adulthood. It is in this context that the KPA pointed out the importance of MCH programmes in reducing infant child mortality as this leads to fertility decline. This was reiterated by the International Conference on Population (ICP) in 1984 which indicated that improved health was one of the essential elements that contribute to reduction of fertility levels. While in some cases reduction of infant and child mortality may be a necessary condition for fertility decline, in Africa in general, due to cultural and social values favouring large family size, this is not sufficient on its own. Another equally important condition for Africa would be changes in attitude from large to small family size, as well as the means to achieve small family size.

6. Maternal and child health (MCH) are concerned with the health problems of mothers and children related to nutrition, infectious and communicable diseases, hazardous and excessive reproduction. Maternal health care ensure that expectant women maintain good health, realize successful out come of the pregnancies. In addition child health care would ensure that children would survive to adulthood. Thus improvements in maternal and child health care would increase natural fertility. In the absence of fertility regulation, improved health of mothers and children has a positive correlation on fertility.

However, MCH programmes through encouraging mothers to breast feed their children for prolonged periods and to space their children adequately, contribute significantly to reduction of fertility. Infact, as will be seen later, breast feeding in Africa is the major factor in reducing fertility than contraception. It has been observed that for women who breastfeed, the prevention of one infant death averts about 0.35 births in Lesotho. 3/ Various research has provided little evidience that moderate reductions in infant mortality necessarily leads to rapid reductions in fertility. 4/ This applies to many African countries. There is a dearth of empirical data in Africa to show the relative role of maternal and child health care in influencing fertility.

7. Elsewhere, it has been shown that improvements in health care and primary education together contribute more to reduction of fertility than income distribution. Kerala State in India is one case in point. It is one of the poor States but has had improved health and primary education. In 1981 for example, 70% of the population in that State was literate compared to 37% for India as a whole; 65% of the women in Kerala were literate compared to 25% for India as a whole. 5/ Infant mortality was 56 per 1000 live births as far back as 1970. This in itself and in combination with motivation to regulate fertility enabled Kerala State to achieve low fertility (crude birth rate was reduced from 37 to 26 per 1000 between 1966 and 1978).

(b) Family planning programmes influence on fertility.

8. Family planning programmes have recently been accepted and viewed by many African governments as an important component of basic health services in improving the health of mothers and their children and in influencing fertility decline where governments have objectives to reduce fertility. Family planning programmes are generally designed to help couples and individuals

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3/ Cochrane S. H.; Zachariah K. C.; Infant and child mortality as a determinant of fertility: the policy implications, 1983 World Bank staff working paper no. 556.

4/ International Family Planning Perspectives Vol. 5, No. 3 September 1979, p. 103; T. P. Schult, "Interrelationship between mortality and fertility" in R. Ridker, ed., Population and Development: The Search for Selective Intervention, Johns Hopkins University Press, Baltimore, 1976.

5/ International Family Planning Perspectives Vol. 8 No. 3 September 1982, pp 105-106.

to prevent un wanted pregrancies and to space births accordingly. This is done through efforts by governments and private organizations to enhance the practice of modern methods of fertility control which include use of pills, intra-uterine devices (IUD's), sterilization and condoms. Recent demographic data show that an increasing number of women in Africa need family planning services.

9. It has been noted that where family planning services are wide spread and affordable, fertility has declined more rapidly than social and economic progress alone would predict as illustrated by data on Tunisia, Colombia, Costa Rica, India, Mexico and Thailand. 6/ Taking contraceptive use as a proxy measure of the impact of family planning, it has been indicated that between 1962 and 1972 that 1/3 to 1/2 of fertility decline in Mauritius was due to increase of age at marriage 7/ while the rest of fertility decline was attributed mainly to increased contraceptive use. 8/ A national survey undertaken in 1975 indicated that 46% of ever married women below the age of 50 were using contraception. 9/ Total fertility rate in Mauritius in 1972 was about 3.4 children per woman. This does demonstrate that family planning can significantly contribute to decline in fertility. Studies on family planning programme effort between 1972 and 1982 have shown that only Mauritius in Africa has had strong family planning programme effort while Tunisia was classified as having a moderate one. Since then recent data show that family planning programme in Tunisia is having great impact on fertility. In most of the African countries, due to little family planning programme activities, the efforts have been either weak, very weak, non-existent. 10/.

6/ World Bank, World Development Report 1984 p. 107

7/ C. Xenox "Fertility Change in Mauritius and the Impact of Family Planning Programme" 1974, Un published report: Government of Mauritius, Five Year Plan for Social and Economic Development (1975-1980), 1976.

8/ W. Brass "Impact of the family planning programme on fertility in Mauritius" in IPPF Medical Bulletin 6 No. 4, August 1976.

9/ Chatherine R. Hein, "Family planning in Mauritius: A National Survey" in Studies in Family Planning Vol. 8, No. 12, December 1977, p. 318.

10/ Mauldin, W. Parker, and Lapham, J. Robert, "Measuring family planning programme effort in LDC's: 1972 and 1982" in Bindsall, Nancy, ed. The effects of Family Planning Programmes on Fertility in the developing world, World Bank staff working paper no. 677, 1984.

In a family planning programme undertaken by the Chogoria Mission in Kenya, which is talked about widely as a success story, it has been pointed out that the strong family planning programmme together with the health programme has been responsible for about 70% of the decline in total fertility rate to 4.8 on 1985 11/, which was much lower than the national figure of 8 at that time.

10. The relative impact of family planning programmes in reducing fertility varies from country to country depending on the socio-economic development. In some Asian countries, for example, Taiwan, Korea, Singapore and Thailand, family planning programmes' contribution in reduction of fertility ranged from 30% to 60% between the 1960s and early 1970s. 12/ Faruquee, in a study of fertility decline in 62 countries between 1970 and 1975, estimated that family planning input dimension accounted for 17% of the decline in fertility. 13/ It has been noted that large reductions in fertility occur mainly in countries that adopt and implement policies with specific objectives of reducing fertility. In such cases family planning programmes contribute to the rapid decline in fertility. 14/ Availability of family planning services can act as a stimuli for the population to change their attitudes to opt for smaller family services. A study done in Ishan, a rural area in Nigeria, shows that at the beginning of the introduction of family planning in the area in 1969, 1/4 of the respondents (married women) said they wanted to limit their

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11/ Proceedings of a conference on Community Based Distribution Alternative Delivery Systems in Africa, Harare, Zimbabwe, 3-7 November, 1986 pp. 96 - 98.

12/ Siew-Ean Khoo, and Chai Bin Park. "The effects of family planning programmes in four Asian countries" in International Family Planning Perspectives and Digest Vol. 4, number 3, Fall 1978.

13/ R. Faruquee, Sources of Fertility Decline: Factor Analysis of Inter Country Data, World Bank Staff Working paper no. 318, 1979; See also International Family Planning Perspectives Vol. 8, no. 3, September 1982, p. 118.

14/ Roberts Cuca, Family planning programmes: An evaluation of experience, World Bank staff working paper No. 345 July 1979, p. 45; see also United Nations, Proceedings of the Expert Group on Fertility and Family, New Delhi, 5 - 11 January 1983, New York, 1984. p. 19.

family size. However, in 1972, more than half of respondents wanted to limit their family size. The change in attitudes towards limiting family size was greater among those women with some education. 15/

11. While family planning programmes do contribute to reduction of fertility, such programmes should also address the problems of those people who suffer from primary and secondary sterility. Though treatment for infertility is expensive and difficult, it has been indicated that, depending on the cause, one-quarter to one-half of couples treated may subsequently have a live birth. 16/ Some of the countries where specialists or centres for diagnosis and treatment of infertility exist in Africa include Cameroon, Kenya, Tanzania and Uganda. Some of the causes of infertility include sexually transmitted diseases like gonorrhea and syphilis. Gonorrhea, for instance, can lead to irreversible blockage of follopian tubes in women and the vas deferens in men if left untreated. As for syphilis, it leads to miscarriages and still births. Poor obstetrical care as well as abortions carried out under unhygienic conditions are alsc responsible for secondary infertility. In the light of these causes of infertility, family planning programmes need to advise couples and individuals of possible dangers of the various causes of infertility by dissemination of information as well as provision of contraception methods and supplies to prevent unwanted pregnancies which could end in illicit abortions. Reduction in infertility could contribute to increase in fertility. In Cameroon, for instance, recent increase in fertility seem to be associated, among other factors, with treatment of infertility.

III. PROXIMATE DETERMINANTS OF FERTILITY

12. Proximate determinants of fertility are the intermediate factors which affect fertility directly. These include women's age at first live birth and last birth, breastfeeding and lactation amerorrhea, frenquency of sexual intercourse and postpartum abstinence, contraception, primary and secondary sterility. Each of these is discussed below.

15/ Ghazi M. Farooq and Lawrence A. Adeokum "Impact of rural family planning programme in Ishan, Nigeria, 1969 - 1972, in Studies in Family Planning Vol. 7, no. 6, June 1976 p. 168.

16/ World Bank, Population Growth and Policies in Sub-Saharan Africa 1986, p. 53.

(a) Women's age at first live birth and last birth.

13. Women in most African countries start child bearing very early. In Sudan and Mauritania as shown in Table 1 below based on women aged 20 - 24, 11 and 15% respectively of the women give birth by age 15. By age 18, about 40 - 44% of women will have given birth in Cameroon, Cote d'Ivoire, Kenya, Mauritania and Senegal. It is further observed that in Benin, Cameroon, Cote d'Ivoire, Ghana, Kenya, Mauritania, and Senegal, 52 - 71% of

Table 1: Percentage of women who had married or had given birth by specific ages, in some African countries based on WFS Data on women aged 20-24

Country	Married by age				Birth by age		
	15	16	18	20	15	18	20
Benin	9	17	42	74	3	21	52
Cameroon	21	36	61	81	6	38	65
Cote d'Ivoire	18	33	60	80	7	44	71
Egypt	11	19	39	63	3	21	37
Ghana	9	20	48	72	3	29	56
Kenya	13	22	45	65	7	38	63
Lesotho	6	14	39	69	3	17	43
Mauritania	39	47	62	72	15	39	54
Morocco	11	19	36	53	3	19	36
Senegal	28	42	62	77	5	40	65
Sudan	26	33	47	57	11	31	44
Tunisia	1	2	13	30	0	3	16
Mean Value	16	25	46	65	6	28	50

Source: United Nations, Fertility Behaviour in the Context of Development, Evidence from the World Fertility Survey, New York 1987, p. 99.

the women give birth by age 20. The median age among women 15 - 49 years at their first live birth in Benin, Cameroon, Cote d'Ivoire, Ghana, Kenya, Lesotho and Sudan shows that half of the women give their first live birth at ages 19-20 years. 17/ Early child bearing is influenced by early entry into marriage. Again using Table 1 based on women aged 20 - 24 at the time of the survey, it is noted that 11-39% of the women marry by age 15 in Cameroon, Cote d'Ivoire, Egypt, Kenya, Mauritania, Morocco, Senegal and Sudan. By the age of 18 about 60% of the women are married in Cameroon, Cote d'Ivoire, Mauritania and Senegal. Over 70% of the women marry by age 20 in Benin, Cameroon, Cote d'Ivoire, Ghana, Mauritania and Senegal.

14. However, WFS data on median age at first marriage shows that half of the women in Benin, Cameroon, Cote d'Ivoire, Ghana and Kenya enter into first marriage at ages between 17.1 to 18.3. 18/ The high proportions of married women at early ages measures the degree to which women in reproductive age are exposed to the risk of conceiving where contraception is little or not used at all as is the case in most African countries. In the absence of secondary sterility, most African women go on childbearing till they reach menopause, that is about the age of 50. It is noted that women of reproductive age in African countries are exposed to child bearing for about 25 years. Thus early start and late stopping of child bearing countributes to high fertility observed in Africa.

15. Table 2 shows that total fertility can be reduced if women delay their age of entry into marriage. A significant impact of delay in entry into marriage on fertility is observed beyond age 24. As it was knoted earlier, between 1962 and 1972, 1/3 to 1/2 of fertility decline in Mauritius was attributed to rising age at marriage, meadian age had increased from 19-22.4 during that period. The reduction from total fecundity due to delay in marriage in some of the countries estimated from WFS data is as follows: Ghana 2.16, Kenya 2.69, Lesotho 3.05, Senegal 1.72, and Sudan North 2.68 children (See Table 4). Among the various determinants of fertility as shown in Table 4, delay in marriage contributes the following reduction in fertility from potential fecudity: Ghana 12.7%, Kenya 15.8%, Lesotho 17.9%, Senegal 10.1%, and Sudan North 16.9%. It has been observed that marriage

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17/ Economic Commission for Africa "Les determinants proches de la fecondite dans quelques pays Africains" ECA/POP/TP/88/1 /2.1(ii)(a) December 1988, p.3.

18/ Ibid. p. 6 of Annex.

Table 2: Mean number of children ever born to ever married women aged 40-49, according to age at first marriage in some African countries based on WFS data

Country	Age at first marriage			
	Under 17	17-20	21-24	25+
Benin	6.8	6.0	5.9	5.0
Cameroon	5.3	5.8	5.3	4.4
Cote d'Ivoire	7.0	6.5	6.6	6.3
Egypt	7.4	6.3	5.0	3.0
Ghana	7.1	6.2	5.6	4.5
Kenya	8.2	7.5	7.5	6.2
Lesotho	5.5	5.4	4.8	3.4
Mauritania	6.3	6.3	4.3	3.9
Morocco	7.4	6.8	6.6	4.2
Senegal	7.2	6.9	5.1	(4.7)
Sudan	6.2	6.0	6.6	4.5
Tunisia	7.7	7.0	6.2	4.6
Average	6.8	6.4	5.8	4.6

Source: United Nations, Fertility Behaviour in the Context of Development, Evidence from the World Fertility Survey, New York 1987, p. 96

Note: The figure for Senegal in the last column in parentheses was based on 10-24 observations.

dissolutions do not influence fertility much in Africa. Data for the 12 African countries that participated in the WFS showed that about 34% of first marriages end up in dissolution and about two thirds of these remarry. 19/

(b) Breast feeding and lactation amenorrhea.

16. Immediately after child birth, a woman is unable to conceive until the normal ovulation and mersturation is restored. This period is called post partum amenorrhea: It lasts for about 2 months among women who do not breastfeed but increases to about 60 - 75% of the average duration of breast feeding for those women who breast feed. 20/ Breast feeding affects fertility through the physiological suppression of ovulation. Breast feeding is generally universal in most African countries as can be seen in Table 3. Nearly 80% of the women breast feed for period of 12 months after birth' 50% breast feed for 18 months after birth; 24% breast feed for 24 months after birth. Thus women who breast feed for 18 months would have birth interval of 2 years and those who breast feed for 24 months would have birth interval of about 2 1/2 years. Longer birth intervals have long been practiced in many African societies in order to enable proper development of the child and to ensure adequate recovery for the mother before the next birth. However, recent trends show that birth intervals are not as long as they used to be in the past.

17. It has been observed in Africa that breast feeding inhibits on average about 4 births per woman. 21/ The WFS data shown in Table 4 confirm this for Ghana, Kenya, Lesotho, Senegal, and Sudan North. The reduction of fertility from potential fecundity

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19/ United Nations, Fertility Behaviour in the Context of Development Evidence from the World Fertility Survey, New York, 1987, p. 85.

20/ Hilary J. Page and Ron Lesthaeghe, eds. Child-Spacing in Tropical Africa, 1981, p. 7.

21/ Shyam Thapa, Roger V. Short and Malcom Potts "Breast feeding, birth spacing and their effects on child survival" in Nature Vol. 335, No. 6192, October 1988, pp 679 - 682.

Table 3: Percentages of Women who were still Breast-Feeding At Various Durations From Birth

Country	Months from Birth				
	3	6	12	18	24
Benin	94	84	67	59	42
Cameroon	93	92	67	52	26
Cote d'Ivoire	92	85	63	62	27
Egypt	97	88	74	49	24
Ghana	96	93	78	49	23
Kenya	97	93	70	41	19
Lesotho	96	93	86	79	31
Mauritania	94	92	74	47	14
Morocco	90	76	66	42	27
Senegal	99	98	94	73	22
Sudan	95	90	80	45	16
Tunisia	87	78	55	33	18
Average	94	90	79	53	24

Source: United Nations, Fertility Behavior in the Context of Development, Evidence from the World Fertility Survey. New York 1987, p. 111 (See Table 59).

by breast feeding from data in Table 4 is estimated as follow: Ghana 25.4%, Kenya 24.8%, Lesotho 25.5%, Senegal 27.4% and Sudan North 22.8%. A study on Egypt revealed that breast feeding depress fertility by about 33% in rurlal areas and by 25% in urban areas. 22/ Unfortunately, there have been declines in the period of breast feeding in many countries in Africa with the consequent possibility that the breast feeding impact on reducing fertility will be reduced unless contraception is widely used.

Table 4: Total fertility rates and reduction from total potential fecundity due to different determinants of fertility in some African countries.

Country and year	Total fertility rate	Reduction from total fecundity due to			
		Marriage delay	Breast-feeding	Contraception	All other factors
Ghana (1979-80)	6.22	2.16	4.31	0.86	3.45
Kenya (1977-78)	7.40	2.69	4.22	0.67	2.02
Lesotho (1977)	5.27	3.05	4.34	0.47	3.87
Senegal (1978)	6.90	3.72	4.65	0.20	3.54
Sudan, North (1979)	5.93	2.88	3.87	0.44	3.99

Source: World Bank, World Development Report 1984 (Table 6.1)

22/ Afaf Rakie Zaguloul "Determinant breast feeding and its impact on fertility in Egypt, 1984" in Cairo Demographic Centre Research Monograph No. 16, 1986, Cairo 1987. p. 39.

(c) Frequency of sexual intercourse and post partum abstinence.

18. Frequency of intercourse determines the probability of conceiving among ovulating women. Long periods of separation reduce fertility. It has been observed in countries like Lesotho that long absence of husbands from the country, working in South Africa, as one of the reasons for the low observed fertility. 23/ According to the Lesotho 1978/79 Labour Force and Migration Survey, about 22% of the male population (dejure) were usually out of the country working in South Africa leaving women alone in Lesotho for a long time.

19. Many societies in Africa support long post partum sexual abstinence during the period a mother breast feeds the child until she weans the baby. However, the post partum sexual abstinence taboo varies from society to society in Africa from 2 months after birth to 24 months. 24/ Some of the mechanism devised to ensure long post partum sexual abstinence in the past was for the pregnant mother to return to her home, give birth there and return to her husband's home after 2 years. Such customs help to ensure longer birth intervals and consequently depressed fertility. Recent trends show that there has been decline in post partum sexual abstinence in many African countries. This is contributing to increase in fertility observed in some countries as there is not wide scale use of contraception to maintain the long birth intervals experienced in the past. This shows clear need for family planning to continue maintenance of long birth interval.

(d) Contraceptive use

20. There is little contraceptive use in most African countries. Mauritius, with a contraceptive prevalence rate of 75% in 1985 has the highest level in Africa. Five countries (Egypt, Morocco, Tunisia, Zimbabwe and Botswana have prevalence rates above 20 while in many countries the rate ranges from 0 - 17%. 25/

23/ Kingdom of Lesotho, Bureau of Statistics, 1976 Population Census Analytical Report Vol. IV, 1981, p. 3. 8.

24/ R. Schoenmaekers, I. H. Shah, R. Lesthaeghe. "The Child spacing Tradition and Post partum Taboo in Tropical Africa: Anthropological Evidence" in Child Spacing in Tropical Africa, Page and Lesthaeghe eds. 1981.

25/ United Nations, Levels and Trends of Contraceptive Use As Assessed in 1988, New York 1989, p. 11.

During 1960 to 1965 contraceptive prevalence for Africa was estimated at 5%, it rose to 11% in 1983 and 14% in 1983. The 1983 prevalence rates for other regions were: East Asia (excluding Japan) 74%: South Asia and Oceania (excluding Australia and New Zealand) 34%; and Latin America 56%. 26/

21. In Table 5, most recent data is presented on 7 countries on contraceptive prevelence and the specific methods used. The pill is the most commonly used method in Algeria (25.1%), Botswana (14.7%), and Zimbabwe (31%). In Egypt, the pill(15.3%) and intra uterine device (15.6%) are equally important methods of contraception. In Tunisia the leading method is IUD (17%) followed by female sterilization (11.5%) and the pill (8.8%) comes third.

22. It is observed that contraceptive use has had little impact in reducing fertility in Ghana, Kenya, Lesotho, Senegal and Sudan, (See Table 4). These figures imply the following fertility reduction from potential fecundity due to contraceptive use: Ghana 5%, Kenya 4%, Lesotho 2.8%, Senegal 1.2% and Sudan 2.3%. This is due to the small proportions of married women who use modern methods of contraception as evidenced from WFS data eg. Ghana 5.5%, Kenya 4.3%, Lesotho 0.3% and Sudan 3.9%. 27/ In Latin America and the Caribean, contraceptive use plays a more important role in reducing potential fecundity than breast feeding.

23. The association between contraceptive prevalence and the level of fertility is close as shown by the following correlation of R^2 of 0.76 for developing countries in the Americas; R^2 of 0.85 for the developing countries in Asia and the Pacific and an R^2 of 0.67 for the African countries of Botswana, Lesotho, Kenya and Zimbabwe. 28/ It should be noted that these figures should not be taken to mean that contraceptive use is responsible for the percentages indicated of the variance in total fertility since contraceptive prevalence is closely related to other factors like women's education and age at marriage.

26/ Ibid p. 26

27/ Economic Commission for Africa, "Les determinants proches de la fecondite dans quelques pays Africains" ECA/POP/TP/88/1 /2.1(ii)(a)/ (See Table 17)

28/ Mauldin, W. Parker, and Segal, J. Sheldon, "World Trends in Contraceptive Use and Their Relationship to Fertility". The Population Council New York, Working paper No. 139. July 1988.

Table 5: Recent Contraceptive Prevalence by Method Among Married Women 15-49

Country	Year	% CU	Fster	Mster	Pill	Injec.	IUD	cdm	vag	rhm	wtd	abst	dch	oth
Algeria	1986	33.8	0.1	-	25.1	0.6	2.0							6.0
Botswana	1988	32.9	4.3	0.2	14.7	5.5	5.6	1.2	0.0	0.2	0.3	0.5		0.3
Egypt	1988	37.6[a/]	1.5	0.0	15.3	0.1	15.6	2.4	0.4	0.6	0.5			1.9[a/]
Ghana	1987	12.8	1.0	0.0	1.8	0.3	0.5	0.3	0.3		0.9	6.2		0.4
Tunisia	1988	49.7	11.5	0.0	8.8	0.8	17.0	1.3	1.0	6.3	2.4			0.7
Uganda[b]	1988	5.5	0.7	0.0	1.4	0.4	0.2	0.0	0.0	2.2	0.3			0.1
Zimbabwe	1988	43.1	2.3	0.2	31.0	0.3	1.1	1.2	0.0	0.3	5.1			1.1

a/ Include 1.1% breast-feeding

b/ for Uganda the data refers to all women 15-49 years old.

Fster = female sterilization
Mster = male sterilization
cu = current use
cdm = Condom
vag = vaginal barrier
rhm = rythm
wtd = withdrawal
abst = abistinence
dch = douche
oth = other

Source: Data was obtained from UN Population Division, New York as of 15/5/89. For all the countries except Algeria, data came from Demographic and Health Survey conducted with assistance from the Institute for Resource Development/Westinghouse. Some of the data was from preliminary reports. For Algeria the data was from on a study by A. Kouaouci on "Fecondite au Nord du Sahara, une Application du modele Bongaartts".

(e) Induced abortion

24. For lack of family planning services to space birth as to prevent unwanted births, illegal abortion is being widely used to stop unwanted births and hence it influences fertility some how in African countries but it is dangerous as it increases maternal mortality. Most laws in Africa do not allow abortion. Unfortunately this only increases the number of illegal abortions which have serious social, health and economic problems especially as many cases of illegal abortion end up in complications many of which find their way to hospitals.

25. A study done in Nigeria on early child bearing found out that the majority of pregnant adolescent females elected to terminate their pregnancies. 29/ School girls decide to abort as they are not allowed in most countries to continue with school once they are pregnant. In many countries in Africa a significant portion of school girls and those not at school are reported to resort to abortion. However, abortion is not confined to young adolescents only as a study done in Lagos, Nigeria, showed that 30.4% of septic abortions accurred to women above 25 years old, 34.8% of the abortees were married women, and 52.2% had 2 or more children. 30/ Abortion is not the best way of terminating pregnancy or reducing fertility. Provision of family planning programmes and services would be a better alternative and would infact minimize resort to illegal abortion. Although abortion contributes to reduce fertility, there is no information regarding its relative impact in reducing fertility.

(f) Primary and secondary sterility

26. Primary sterility refers to the inability of an individual, or couple to have a live birth where as secondary sterility refers to the inability to give birth again after the previous birth. One of the indications of the incidence of primary sterility is the proportion of women without a fertile pregnancy after 5 years of marriage. Using women aged 30 - 44 from WFS data, primary sterility is found to be highest in Cameroon, about 10.4%. It is between 2.2% and 4.5% in Benin, Cote d'Ivoire,

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29/ Edmunds, M; Paxman, J. M. "Early pregnancy and child bearing in Guatamala, Brazil, Nigeria and Indonesia: Addressing the consequencies" in Pathfinder Fund, 1984.

30/ Olukoya A. A. "Pregnancy termination: Results of a community-based study in Lagos, Nigeria, 1987," in International Gynaecology and Obstetrics, 25, 1:41-46.

Egypt, Ghana, Kenya, Lesotho, Mauritania, Morocco, Senegal, Sudan and Tunisia. 31/ Primary sterility can also be measured by the proportions of women aged 30 - 44 without any living children who indicate having given no live birth. Such data from WFS give the following magnitude of primary sterility: Benin 3.4%, Cameroon 14.4%, Cote d'Ivoire 5.4%, Egypt 3.7%, Ghana 3.2%, Kenya 3.2%, Lesotho 5.6%, Mauritania 3.1%, Morocco 5.5%, Senegal 6.3%, Sudan 5.6%, and Tunisia 3.4%. 32/

27. Available information on studies in Kenya show that primary and secondary infertility occur with approximately equal frequency, but in West Africa, secondary infertility is found to account for up to two-thirds of diagnosed cases. In Cameroon, secondary infertility affects 14-39% of women aged 15-50 in different regions of the country. 33/

IV. SOCIO-ECONOMIC CORRELATES OF FERTILITY

28. It was pointed out in section III that proximate determinants have a direct influence on fertility. However, socio-economic variables affect fertility indirectly by modifying the proximate determinants. It has been noted that socio-economic factors have a substantial relation to fertility decline. 34/ In some Asian countries like Taiwan and Korea, studies have given more weight to socio-economic factors in reducing fertility than to family planning while in Thailand, family planning was the prime contributor to rapid fertility decline. This section discusses the socio-economic correlates of fertility by fucusing on economic development, women's education and employment, and place of residence.

(a) Economic development

29. Various indicators are used as a measure of economic development. These include, per capita GNP, life expectancy, population living in urban areas, expenditure by govenments on

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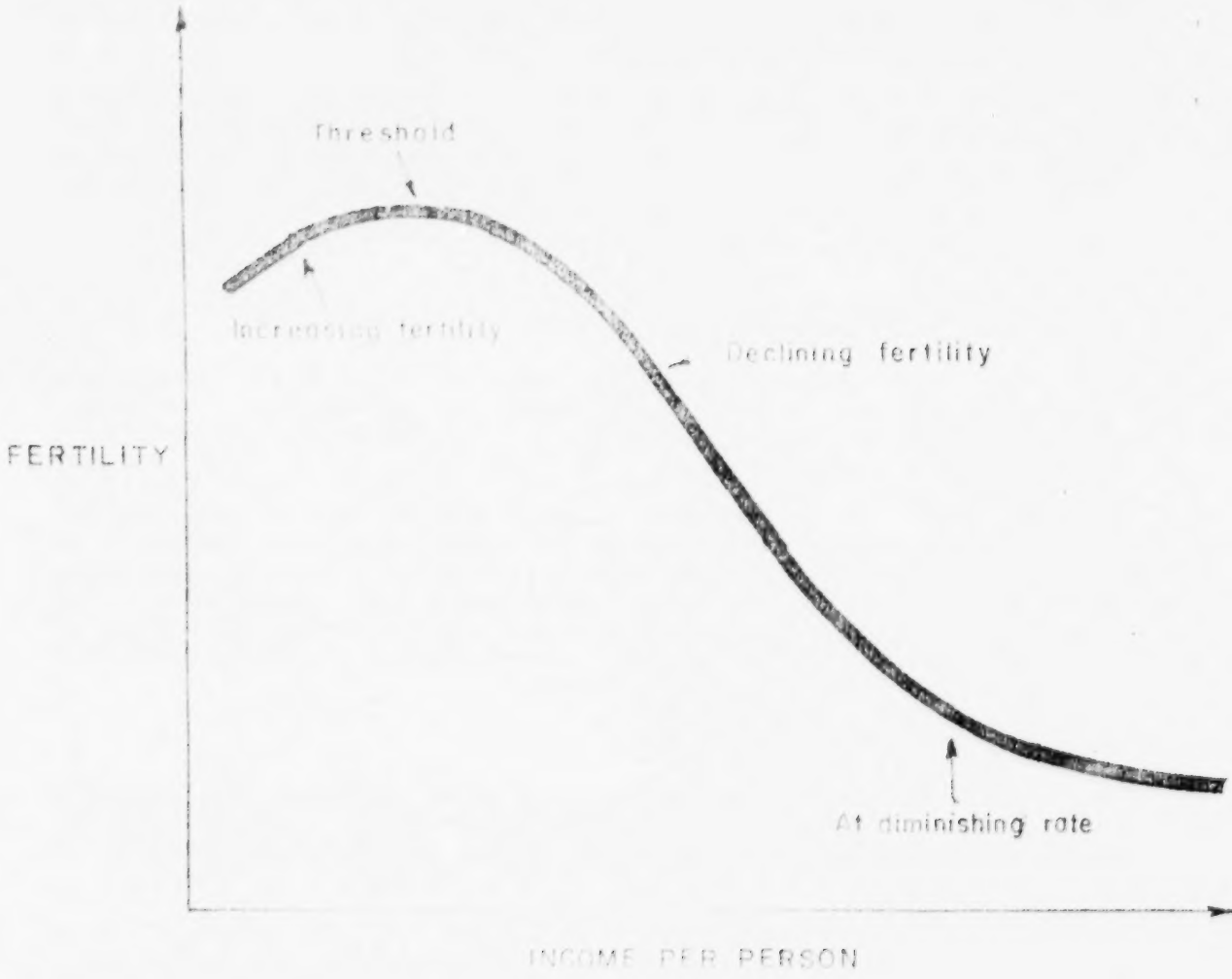
31/ United Nations: Fertility Behaviour in the Context of Development, Evidence from the World Fertility Survey, New York 1987, p. 35.

32/ Ibid.

33/ World Bank, Population Growth and Policies in Sub-Saharan Africa, 1986 p. 53.

34/ W. P. Mauldin and Berelson, "Condition of Fertility decline in developing countries, 1969-1975" in Studies in Family Planning Vol. 9: No. 5, 1978; also International Family Planning Perspectives Vol. 8, No. 3, September 1982 p. 118.

RELATION BETWEEN FERTILITY & INCOME PER RERSON



Source: World Bank World Development Report 1984

health, education etc. Faruquee made an attempt to identify factors contributing to fertility decline in 62 countries between 1970 and 1975. Some of the findings from his study were as follows: 35/ (a) the level of development (which included variables as percentage of population living in urban areas, per capita GNP, life expectancy, crude death rate) accounted for 30% of the variance in crude birth rate decline; (b) government expenditures (total for health, education and total government consumption accounted for 17% of the decline; (c) family planning inputs dimensions accounted for 17% of the decline; (d) actual and potential rates of an economy (includes domestic investment as percentage of gross domestic product) accounted for 11% of the decline. This shows that all factors that could be regarded as indicators of economic development do indeed affect fertility decline substantially. However, the relative impact of economic development varies from country to country.

30. If we look at income and fertility we note a positive correlation initially. Higher income parents can afford to have more children. But as changes in life-styles give more emphasis to material comforts which eventually take a higher portion of increased per capita income, the demand for children decreases - and couples opt for fewer children. This then brings an inverse relationship between income and fertility. The relationship between income and fertility varies according to the absolute levels of income as noted in a study by the World Bank. 36/ Figure 1 shows this relationship. Below the threshold increases in income are associated with higher fertility. After the threshold point, increases in income are associated with rapid decrease in fertility till a point when further increases in income result in fertility decline at diminishing rate. Many African countries have not yet reached the threshold point.

(b) Women's education and employment

(i) Women's education

31. The relationship between fertility and education levels between those with no education and those with some education up to 6 years of education does not always give consistent results.

35/ R. Faruquee, Source of Fertility Decline: Factor Analysis of Inter country Data, World Bank Staff working paper 318, Washington DC. 1979; See also International Family Planning Perspectives Vol. 8, No. 3, September 1982, p. 118.

36/ World Bank, World Development Report 1984, p. 109; see also Richard A. Easterlin "The effects of modernization on family reproductive behaviour", in United Nations. The Population Debate: Dimensions and Perspectives, papers of the World Population Conference Bucharest 1974, Vol II, New York 1975.

Data from WFS, for example, showed that women with 1-3 years of education in Benin, Cameroon, Cote d'Ivoire, Kenya, and Senegal had higher total fertility than those without education. A similar situation was also observed in Cameroon and Kenya when comparing those with no education against those with 4-6 years of education. In some cases a few years of primary education contributes to improved knowledge of personal hygiene, food care, break down in traditional beliefs and customs with regard to sexual intercourse and taboos without necessarily use of contraceptives. This leads to fertility increase. However in Benin, Cote d'Ivoire, Ghana, Lesotho, Senegal and Sudan, those with 4-6 years of education had lower fertility than those with no education. Thus we note that the relationship between fertility and education below 7 years is not always linear. However, beyond primary education the relationship between education and fertility is always negative as higher education is associated with lower fertility. It has been observed in Africa that women with at least 10 years of education want on average, 3.3 fewer children than women with no education. 37/

32. One of the ways in which education determines the level of fertility is through postponment of marriage to older ages as can be seen in Table 6 which shows the singulate mean age at marriage by education. For the 8 countries shown in this table, difference in mean age at marriage between those with no education and those with 7 years or more of education ranges from 3.1 to 7.2 years. In Benin, Morocco, Senegal and Sudan, the difference in fertility between those with no education and those with 7 years or more of education were 3.1, 2.2, 2.8 and 3.1 children per woman respectively according to WFS data with those with no education having higher fertility. In other countries like Cameroon, Cote d'Ivoire, Ghana, Kenya, and Lesotho, the difference in total fertility was small, ranging between 1 and 1.6 childrend. 38/ This shows that in some cases women who marry late try to make up for lost time to have as many children as possible within the shortest possible time. Among some women where a marked negative relation between education and fertility is observed, this is explained by education which shifts the demand for children - educated people realize the expense of educating their children and at the same time they would like to live a reasonable standard of life.

37/ World Bank, Population Growth and Policies in Sub-Saharan Africa Washington D. C., 1986, p. 46.

38/ United Nations, Fertility Behavior in the Context Development, Evidence from the World Fertility Survey. New York, 1987 p. 224, Table 112.

Table 6: Singulate Mean Age at Marriage by Years of Education Completed.

Country	Singulate Mean Age at Marriage by Education				
	0 (1)	1-3 years (2)	4-6 years (3)	7 or more years (4)	Difference (4) - (1)
Benin	16.9	18.9	19.5	24.1	7.2
Cameroon	15.4	17.6	17.2	22.1	6.7
Cote d'Ivoire	17.1	17.7	18.5	21.8	4.7
Ghana	17.4	18.2	19.2	20.5	3.1
Kenya	17.2	18.7	19.5	21.8	4.6
Morocco	20.3	23.6	25.5	25.9	5.6
Senegal	16.7	17.6	20.4	22.8	6.1
Sudan	21.2	21.2	22.8	24.7	3.5

Source: United Nations, Fertility Behavior in the Context of Development, Evidence from the World Fertility Survey, New York 1987, p. 233.

33. Another way in which education influences fertility is by changing women's attitudes towards smaller family size. Educated women are likely to accept family planning and use contraceptive. WFS data show that in Benin, Cote d'Ivoire, Senegal and Mauritania, women with no education wanted between 2.3 and 3.5 more children than those women with 7 or more years of education. Regarding contraceptive use, it has been observed in Kenya that 22% of the women with 9 or more years of education in 1984 were using contraception as opposed to only 7% of those with 5 or fewer years of education. 39

(ii) Women's employment

34. In the African context, the relation between women's employment and fertility is not always clear. Problems of definition of employment do contribute to this. Moreover, employment works closely with other variables like education in influencing fertility. Some studies find positive relationship and others come up with negative relationship between employment and fertility. A study done in Nigeria for example, found out that fertility was lowest among non-working women and highest among women who either had pre-nuptial and post-nuptial working experience or had work for financial renumeration in non-familiar enterprises. 40/ For some African countries, WFS data showed that among the women 40 - 49 years, those in traditional employment had 1.7 children more than those employed in the modern sector; those with no work had 1.4 more children than those employed in the modern sector. 41/ In Tunisia, according to a recent survey, women with jobs have on average 2 children while those without jobs have more than 4 children. 42/ Women's employment in traditional and agricultural sectors does not have much impact to discourage high fertility.

35. Where employment has a significant impact on reducing fertility, it operates in conjunction with higher levels of education which helps to delay marriage and through changes in life-styles which favour fewer children in order to accommodate

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39/ World Bank, World Development Report 1984 p. 110.

40/ Bamikale J. Feyisetan, Oladimeji Togunde, "Fertility and indices of women's status: A study of relationships in Nigeria" in Genus Vol. XLIV No. 1-2, 1988, p. 242.

41/ United Nations, Fertility Behavious in the Context of Development 1987 ofcit, p. 266 (interpreted from Table 130).

42/ IDRC Reports, Vol. 16, No. 3 July 1987, see also IPPF Open file of 11/9/87, p. 18.

Other social needs as well as the desire to have few children who can be adequately educated. The higher the level of socio-economic development, the greater the impact of employment on fertility, i.e. employment in the modern sector, in contrast to those who do not work or those employed in agriculture. Modernization in this case would have a significant impact on fertility reduction. However, a comparative WFS study on the relationship between women's employment and fertility, after controlling for other socio-economic variables, found out that women in modern occupations bear childrend at a rate that would result in fertility that is about one-half child lower, on avarage, after 20 years of marriage, than that of women who did not work. 43/

(c) Place of residence: Urban/rural

36. Urban/rural impact in influencing fertility operates through other variables like education, employment and level of economic development, in other words, through socio-economic variables. Higher socio-economic development in urban than in rural areas make urban areas have lower fertility levels than those in rural areas.

37. Evidence from WFS data show that singulate mean age at marriage is higher in urban areas than in rural areas by the following number of years in some of the African countries: Benin 3.2; Cameroon 2.6; Cote d'Ivoire 0.3; Egypt 3.2; Ghana 1.1; Kenya 0.8; Morocco 2.9; Senegal 3.7; Sudan 1.9; Tunisia 1.4. 44/ Similarly, contraceptive prevalence among currently married women 15-49 years was observed to be higher in major urban areas than in rural areas in some of the countries by: Benin 4%, Cameroon 7%, Cote d'Ivoire 3%, Egypt 29%, Ghana 7%, Kenya 11%, Lesotho 2%, Morocco 30%, Sudan 14%, and Tunisia 22%. 45/ Higher contraceptive prevalence in major urban areas is a reflection of the availability of family planning programmes in those areas. However, with regard to breast feeding, major urban areas show lower mean duration of breast feeding than those observed in rural areas as seen in Table 7 below, exception being found in Mauritania and Sudan where there seem to be no significant difference.

43/ United Nations, Women's Employment and Fertility, A Comparative Analysis of World Fertility Survey Results for 38 Developing Countries, New York 1985, p. 85.

44/ United Nations, Fertility Behavior in the Context of Development, New York 1987, p. 199.

45/ Ibid. p. 202.

Table 7: Mean Duration of Breast Feeding in Months by Residence

Country	Rural	Major urban	Difference
Benin	22.1	16.5	5.6
Cameroon	20.4	15.3	5.1
Cote d'Ivoire	20.8	16.7	4.1
Egypt	21.4	13.9	7.5
Ghana	20.7	14.7	6.0
Kenya	17.3	12.9	4.4
Mauritania	17.5	17.8	-0.3
Morocco	17.6	12.7	4.9
Senegal	22.0	17.5	4.5
Sudan	17.4	16.7	0.7
Tunisia	17.7	10.0	7.7

Source: United Nations, Fertility Behavior in the Context of Development, Evidence from the World Fertility Survey, New York, 1987 p. 200.

38. In terms of total fertility rate, rural areas have higher fertility than major urban areas according to Table 8 with the exception of Mauritania where the rate is the same in both areas. In Egypt, Kenya and Morocco the difference is between 2.3 to 3.1 children. In five countries the differences range from 1.2 to 1.6 children. It might be argued that urbanization which is associated with modernization reduces the demand for children as the cost of raising children in urban areas is expensive. Since most African countries are still at a very low socio-economic development, it is noted that in many countries the difference in fertility levels between rural and major urban areas is not that much. With increased transformation of economies and improved social conditions, fertility would be lower in both rural and urban areas as compared to the current levels.

V. POLICY CONSIDERATIONS TO INFLUENCE FERTILITY

39. This paper attempted to discuss the relative roles of various factors that influence fertility one way or the other. These include maternal and child health care, family planning programmes, proximate determinants and socio-economic development. All these factors interact to influence fertility. At given periods some of these factors demonstrate positive correlation to fertility and at other times there is negative relationship. Disentangling the impact of each of the various factors on fertility is a difficult and an impossible task. However, there is some understanding in relative terms that fertility can be influenced by many diffent factors.

40. Given the imbalance between population growth and socio-economic development in most African countries, it is necessary, as reflected in the objectives of the LPA, to achieve population growth rates that are compatible with the desired economic growth and social development goals. With this in mind, the Joint Conference may emphasize the need for member States to implement the population policy in the LPA, with special attention to influence and reduce the prevailing high fertility levels as this would eventually contribute to reduction of population growth rates.

41. To facilitate rapid fertility decline where governments are concerned about the adverse effects of rapid population growth on socio-economic development, deliberate policies with specific objectives to reduce fertility should be adopted and implemented. Such policies should emphasize the need to improve the health of the mothers and children. Significant reduction in infant and child mortality in combination with many other factors can be a catalyst in fertility reduction. Policies on family planning with the objective of spacing births or limiting family size should provide information, education, and communication (IEC) services on methods and ensure availability of supplies for each family planning method. Where family planning programmes are

Table 8: Total Fertility Rate (TFR) Among Women Aged 15-49 Years in Rural and Major Urban Areas

Country	TFR Among Women Aged 15 - 49		
	Rural	Major Urban	Difference
Benin	7.4	5.8	1.6
Cameroon	6.5	5.3	1.2
Cote d'Ivoire	7.7	6.4	1.3
Egypt	6.1	3.8	2.3
Ghana	6.8	5.4	1.4
Kenya	8.5	5.9	2.6
Mauritania	6.3	6.3	0.0
Morocco	7.0	3.9	3.1
Senegal	7.5	6.8	0.7
Sudan	6.4	4.8	1.6

Source: United Nations, Fertility Behavior in the Context of Development, Evidence from the World Fertility Survey, New York 1987, p. 193 Table 96.

being advocated, the relevant laws should be reviewed and should support family planning programmes and not be in conflict. There is need for strong leadership to persuade the people at all levels to understand the benefit of smaller family size. Availability of family planning programmes does generate demand for its use. While in the majority of cases there is need to reduce fertility, the special needs of those who cannot have children should not be overlooked. Family planning programmes and health services should help such people to have children.

42. Policies to increase age at marriage should be promoted as delay in age at marriage reduces fertility. One way to encourage late marriages should be education policies that enable women to have adequate education at least beyond primary level. Government policies should also encourage women to maintain long breast feeding periods as this is a major factor in most African countries in reducing fertility. However, as there is evidence that the duration of breast feeding is on the decline, attempts should be made to make contraceptives easily available to the people both in urban and rural areas for spacing of births as well as limiting family size for those who want to do so. Easy availability and affordability of contraceptives as a means of family planning would reduce the problems of maternal mortality arising from illegal abortion. Wide spread use of contraception as shown in some developing and developed countries, does reduce fertility significantly.

43. Socio-economic development by influencing the proximate determinants of fertility has been important in some settings in reducing fertility. In the long run, increased socio-economic development would have an impact to lower fertility. Thus women's increased education and employment, more especially employment in the modern sector, increased income per capita and improved social condition generally should be among the policies promoted and implemented by all governments. Such policies would reduce the prevailing fertility levels both in urban and rural areas. Policies on maternal and child health care, family planning programmes, and socio-economic development need to be integrated in efforts to improve the overall living conditions of the population. It is not a question of socio-economic development alone nor family planning programmes alone that should be seen as a means to reduce fertility. Both of these should be tackled simultaneously and the combined effect has greater impact to influence fertility.